

Application No. 10/577,069  
AMENDMENT dated March 9, 2010  
Reply to Office Action of October 20, 2009

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A method for manufacturing a compound semiconductor substrate, comprising the steps of:

- (a) epitaxially growing a compound semiconductor functional layer (2) on a substrate (1),
- (b) bonding a support substrate (3) to the compound semiconductor functional layer (2),
- (c) polishing the substrate (1) and a part of the compound semiconductor functional layer (2) on the side which is in contact with the substrate (1), to remove them,
- (d) bonding a thermally conductive substrate (4) having a thermal conductivity higher than that of the substrate (1) to the exposed surface of the compound semiconductor functional layer (2) which is provided in the step (c) to obtain a multilayer substrate, and
- (e) separating the support substrate (3) from the multilayer substrate wherein the thermally conductive substrate (4) includes at least one selected from the group consisting of a polycrystalline Si substrate obtained by CVD or sintering process; a substrate formed with a polycrystalline or amorphous diamond thin film having a thickness of about not more than 300 µm and about not less than 50 µm on a single crystal Si substrate, polycrystalline Si substrate or ceramics substrate; and a polycrystalline or amorphous SiC, AlN, and BN obtained by CVD or sintering process.

2. (Previously Presented) The method according to claim 1, wherein the compound semiconductor functional layer (2) includes at least two layers.

Application No. 10/577,069  
AMENDMENT dated March 9, 2010  
Reply to Office Action of October 20, 2009

3. (Previously Presented) The method according to claim 1, wherein the compound semiconductor functional layer (2) includes at least one selected from the group consisting of In, Ga, and Al and at least one selected from the group consisting of N, P, As, and Sb.

4. (Cancelled)

5. (Previously Presented) A method for manufacturing a compound semiconductor substrate, comprising the steps of:

(f) epitaxially growing a compound semiconductor functional layer (22) on a substrate (21),

(g) bonding a thermally conductive substrate (23) having a thermal conductivity higher than that of the substrate (21) to the surface of the compound semiconductor functional layer (22) and

(h) polishing the substrate (21) and a part of the compound semiconductor functional layer (22) on the side which is in contact with the substrate (21) to remove them.

6. (Previously Presented) The method according to claim 5, wherein the compound semiconductor functional layer (22) includes at least two layers.

7. (Previously Presented) The method according to claim 5, wherein the compound semiconductor functional layer (22) includes at least one selected from the group consisting of In, Ga, and Al and at least one selected from the group consisting of N, P, As, and Sb.

8. (Cancelled)

Application No. 10/577,069  
AMENDMENT dated March 9, 2010  
Reply to Office Action of October 20, 2009

9. (Previously Presented) A method for manufacturing an electronic device, comprising the steps in the method according to claim 1 and a step of forming an electrode on the resultant compound semiconductor substrate.

10. (New) The method according to claim 5, wherein the thermally conductive substrate (23) includes a substrate formed with a polycrystalline or amorphous diamond thin film having a thickness of about not more than 300  $\mu\text{m}$  and about not less than 50  $\mu\text{m}$  on a single crystal Si substrate, polycrystalline Si substrate or ceramics substrate.

11. (New) The method according to claim 1, wherein the bonding of step (b) is performed by using an adhesive such that the support substrate may be removed from the compound semiconductor functional layer without providing chemical and physical damage on the epitaxial growth surface of the compound semiconductor functional layer.

12. (New) The method according to claim 11, wherein the adhesive is selected from the group consisting of electron wax and adhesive tape.